

be seen to form on the surface of the ramulus a continuous zigzag line lying in the general direction of its axis. The posterior side, on the contrary, is destitute of markings of any kind, but when focused at a little distance below the surface (fig. 3) there will be brought into view two longitudinal series of irregularly polygonal areolæ, those of each series alternating with those of the other, and being throughout in close contact with them. They are bounded by chitinous laminæ which pass off from the anterior walls of the common perisarcal tube, and penetrating into the interior of this, give rise to two longitudinal series of chambers which are lined by the cœnosarc in the way about to be seen.

Between the posterior walls of the ramulus and this double series of chambers is a space occupying the entire width of the ramulus, and forming a posterior longitudinal chamber which extends continuously through the entire ramulus (fig. 5; fig. 8, c).

The hydrothecæ terminate each in a very oblique orifice, which is directed posteriorly and is provided with a delicate membranous valve (figs. 3, 4, 9).

*Cœnosarc.*—All the areolæ or anterior chambers just mentioned are lined by the cœnosarc, which instead of forming as in other Hydroids a continuous uninterrupted tube, is broken up into two longitudinal series of segments (figs. 4, 5; fig. 8, b). There can be little doubt that the segments of one and the same series freely communicate with one another through the chitinous walls of the chambers.

The cœnosarc by which these segmental chambers are lined consists of a thick endodermal layer overlaid by a thin ectoderm, and enclosing that portion of the common somatic cavity which lies in each segment. With each of these segments a hydranth is directly continuous (fig. 5), and every hydranth thus corresponds to one of the transverse segments into which the common cœnosarc of the ramulus is divided, and has its gastral cavity opening directly into the cavity of the segment.

The great longitudinal posterior chamber (fig. 5; fig. 8, c) is also lined by a layer of cœnosarc. This, however, is thinner than that of the anterior transverse chambers, and was but imperfectly preserved in the specimen.

The pinnately disposed ramuli of *Idia pristis* thus present a structure which, so far as is known, does not occur elsewhere among the Hydroida. The division of the common chitinous perisarcal tube into distinct chambers, and the consequent division and segmentation of the cœnosarc, constitute a combination of characters which, however far we may be from assigning to it its true significance, is of sufficient systematic value to necessitate the relegation of *Idia* to a separate section among the Calyptoblastic Hydroids.

While the structure of the pinnæ is thus so very exceptional, that of the common stem (fig. 6) differs but little from the usual condition of this part in the Sertularian Hydroids. The hydrothecæ are as in the pinnæ alternate, but those of opposite sides show no tendency to coalesce, being on the contrary separated from one another by a